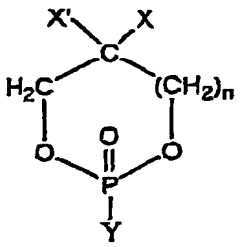
CLAIMS:

1. A compound of the following formula I:



or pharmaceutically acceptable salts thereof,

wherein:

n is 0 or 1;

X is hydrogen, O-R, NH-R or N-(C=O)-R;

X' is hydrogen or CH_2OH;

Y is O-R_1, NH-R_1;

R is hydrogen, linear or branched alkyl, linear or branched acyl, substituted or non-substituted aryl or araalkyl residue;

R_1 is hydrogen, linear or branched alkyl, linear or branched acyl, substituted or non-substiuted aryl, alkylcarboxy ester or alkyl-N-R_2R_3;

R_2 and R_3 are independently hydrogen or an alkyl group;

alkyl is an alkyl group having from 1 to 24 carbon atoms, preferably from 3 carbon atoms to 20 carbon atoms, most preferably from 5 carbon atoms to 15 carbon atoms;

acyl is an aliphatic saturated or unsaturated C_1 - C_{24} acyl group, preferably an acyl group having an even number of carbon atoms, and most preferably an acyl group derived from a natural fatty acid such as a saturated aliphatic acyl group or an unsaturated aliphatic acyl group;

aryl is a to a mono- or poly-carbocyclic aryl group, most preferably phenyl, optionally substituted by C_1 - C_4 alkyl, halogen and/or hydroxy;

provided that when X and X' are hydrogen Y is not OR_1 wherein R_1 is hydrogen, alkyl or aryl; that when X' is hydrogen X is NHR or N(C=O)-R; provided that when X' is CH_2OH then X is NH-R or NO_2; and that when n=1, X'=H and X= $NH(C=O)-CH_3$, Y is not O-p-NO_2-C_6H_4.

2. A compound according to claim 1, wherein the acyl moiety is selected from the group comprising of acetyl, butyryl, caproyl, octanoyl, decanoyl, lauroyl, myristyl, palmitoyl and stearoyl, palmitoleyl, oleyl, linoleyl, and ricinoleyl.

3. A compound according to claim 1 wherein Y is OH and X is O-R or NH-R; wherein R is a linear or branched alkyl or linear or branched acyl.

4. A compound according to claim 1 wherein X is hydrogen and Y is O-acyl or NH-R_1; wherein R_1 is a linear or branched alkyl or linear or branched acyl.

5. Compounds of formula I according to claim 1 selected from the group consisting of:

(a) 1,3-cyclic propandiol phosphate-5-oleoyl;

(b) 1,3-cyclic propandiol phosphate-5- benzyloxy;

(c) 1,3-cyclic propandiol phosphate-5- benzylamino;

(d) 1,3-cyclic propandiol phosphate-5- caproylamido;

(e) 1,3-cyclic propandiol phosphate-2-benzyloxy;

(f) 1,3-cyclic propandiol phosphate-2- acetyloxy;

(g) 1,3-cyclic propandiol phosphate-2-methylamino;

(h) 1,3-cyclic propandiol phosphate-5-glycine ethylester;

(i) 2-methyl 1,3-cyclic propanediol phosphate;

(j) 2-dimethylamine ethyl ester 1,3-cyclic propanediol phosphate;

(k) 1,3-cyclic propanediol phosphoamidate;

(l) 1,3-cyclic propanediol N-ethyl phosphoamidate;

(m) 1,3-cyclic propanediol phosphoamidate glycine ethylester;

(n) 2-benzyloxy 1,3-cyclicpropanediol phosphate;

(o) 2-caproimido 1,3-cyclicpropanediol phosphate;

(p) 5-amino-5-hydroxymethyl-2-oxo-2λ5-[1,3,2]dioxaphosphinan-2-ol;

(q) 5-nitro-5-hydroxymethyl-2-oxo-2λ5-[1,3,2]dioxaphosphinan-2-ol;

or pharmaceutically acceptable salts thereof.

6. A pharmaceutical composition comprising a pharmaceutical acceptable carrier and, as an active ingredient, a compound of the general Formula I in Claim 1 or pharmaceutically acceptable salt thereof.

7. A pharmaceutical composition according to claim 6, for promoting cell differentiation in cancerous cells.

8. A pharmaceutical composition according to claim 6, for promoting protein expression in cancerous cells.

9. A pharmaceutical composition according to claim 8, wherein said protein is estrogen receptor -α or progesterone receptor.

10. A pharmaceutical composition according to any one of claims 6 to 9 wherein the compound of formula I is selected from the group consisting of

(a) 1,3-cyclic propandiol phosphate-5-oleoyl;

(b) 1,3-cyclic propandiol phosphate-5- benzyloxy;

(c) 1,3-cyclic propandiol phosphate-5- benzylamino;

(d) 1,3-cyclic propandiol phosphate-5- caproylamido;

(e) 1,3-cyclic propandiol phosphate-2-benzyloxy;

(f) 1,3-cyclic propandiol phosphate-2- acetyloxy;

(g) 1,3-cyclic propandiol phosphate-2-methylamino;

(h) 1,3-cyclic propandiol phosphate-5-glycine ethylester;

(i) 2-methyl 1,3-cyclic propanediol phosphate;

(j) 2-dimethylamine ethyl ester 1,3-cyclic propanediol phosphate;

(k) 1,3-cyclic propanediol phosphoamidate;

(l) 1,3-cyclic propanediol N-ethyl phosphoamidate;

(m) 1,3-cyclic propanediol phosphoamidate glycine ethylester;

(n) 2-benzyloxy 1,3-cyclicpropanediol phosphate;

(o) 2-caproimido 1,3-cyclicpropanediol phosphate;

(p) 5-amino-5-hydroxymethyl-2-oxo-2λ5-[1,3,2]dioxaphosphinan-2-ol;

(q) 5-nitro-5-hydroxymethyl-2-oxo-2λ5-[1,3,2]dioxaphosphinan-2-ol;

or pharmaceutically acceptable salts thereof.

11. Use of a compound of formula I for the preparation of a medicament for treating disorders and diseases, which can be treated by promoting cell differentiation.

12. Use according to claim 11, wherein said disorder is tumor growth.

13. Use of a compound of formula I for the preparation of a medicament for treating disorders and diseases, which can be treated by promoting protein expression.

14. Use according to claim 13, wherein said protein is estrogen receptor-α or progesterone receptor.